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## *On a Method of Supporting a Large Mirror when Silvering.*

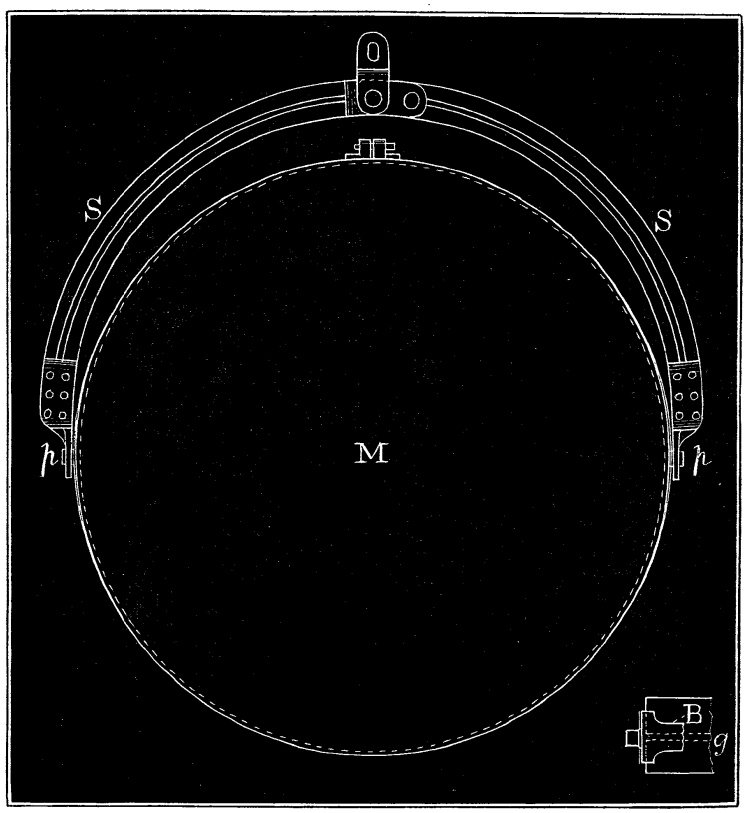
By Edward Crossley, M.P.

On account of the recent construction of large reflecting telescopes, and their application to celestial photography, it seems important to record the means by which any difficulties in handling large mirrors have been overcome. I therefore venture to lay before the Society a description of a method of supporting and handling a 3-foot mirror when silvering. It differs from Sir Howard Grubb's method of handling a large mirror principally in having a groove in the edge of the mirror.

Two plates have cylindrical ribs fitting into the groove, with pivots on the outside; the plates are held in their places on two opposite sides of the mirror by a copper band passing over and rivetted to them. The band is cut in two at two points 90° from the pivots; the cut ends are then united by screw bolts. This renders it an easy matter to get band and ribs into their places. A stirrup with holes for the pivots to slip into is then put on; and to facilitate this the stirrup is cut in two at the top and the two halves secured by a screw bolt.

The band, pivots, plates, and ribs are of copper; the ends of the stirrup of aluminium bronze. All these are coated with silver, to protect them from the action of the silvering solution.

In the annexed figure M is the mirror, S the stirrup, $p$ the pivots, $g$ the groove, B the band.

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In this way the mirror can be lifted and placed at any angle with the greatest ease and with perfect safety.

The groove round the edge of the mirror is $\frac{3}{16}$ in. in depth, the plates $8\frac{1}{2}$ in. by 3 in. by $\frac{3}{16}$ in.; the band is $1\frac{1}{2}$ in. in width and $\frac{1}{16}$ in. thick, but where it is rivetted to the plates it is of the same width as the plates.

The readiness with which the mirror can be set at any angle obviates the necessity for using a large quantity of silvering solution; and by setting the mirror at an angle of 7° and the silvering vessel at half that inclination the quantity of solution can be reduced to less than six gallons, at least ten gallons being required to get out all the air when the vessel is horizontal.

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## *Observations of Comets made at the Orwell Park Observatory in the years* 1888–89. By John I. Plummer, M.A.

*Comet III.* 1888 . . . (*Brooks, August* 7, 1888.)

| 1888. | Greenwich Mean Time. h m s | Comet—Star. Δα. m s | Δδ. ′ ″ | No. of Comps. | Comet's App. R.A. h m s | Log (p × Δ). | Comet's App. Dec. ° ′ ″ | Log (p × Δ). | Red. to App. Place. s | ″ | Comp. Star. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aug. 29 | 10 5 20 | −2 1·11 | − 5 11·1 | 8–8 | 12 54 4·35 | 9·6155 | +38 34 1·8 | 0·8454 | −0·41 | +6·9 | 1 |
| Sept. 3 | 9 27 38 | +1 40·26 | + 5 43·6 | 4–4 | 13 26 31·50 | 9·6337 | +35 12 1·4 | 0·8119 | −0·28 | +7·6 | 2 |
| 6 | 9 31 7 | −0 29·35 | − 6 39·2 | 9–9 | 13 44 29·02 | 9·6235 | +32 58 9·0 | 0·8168 | −0·20 | +8·2 | 3 |
| 11 | 9 50 1 | +1 16·80 | − 4 25·5 | 7–7 | 14 11 45·87 | 9·5998 | +29 4 38·1 | 0·8357 | −0·08 | +8·6 | 4 |
| 12 | 9 28 8 | +3 58·46 | + 4 38·4 | 6–6 | 14 16 44·64 | 9·6076 | +28 18 26·5 | 0·8212 | −0·07 | +8·5 | 5 |
| 13 | 8 52 13 | −0 34·21 | + 2 47·1 | 9–11 | 14 21 33·89 | 9·6128 | +27 32 8·9 | 0·7960 | −0·03 | +8·8 | 6 |
| 26 | 8 25 41 | +1 13·65 | + 0 42·0 | 6–6 | 15 16 13·32 | 9·5801 | +17 39 58·5 | 0·8103 | +0·18 | +8·8 | 7 |
| 27 | 7 44 31 | −0 42·03 | + 3 7·0 | 9–9 | 15 19 43·36 | 9·5642 | +16 58 51·3 | 0·7932 | +0·20 | +8·8 | 8 |
| 30 | 7 35 30 | +1 18·32 | + 4 48·3 | 8–8 | 15 30 3·29 | 9·5555 | +14 55 16·7 | 0·7986 | +0·23 | +8·6 | 9 |
| Oct. 1 | 7 47 4 | +0 22·32 | − 4 45·8 | 7–7 | 15 33 24·00 | 9·5608 | +14 14 48·9 | 0·8059 | +0·24 | +8·6 | 10 |
| 5 | 7 58 3 | −2 17·71 | − 4 55·1 | 7–7 | 15 46 5·14 | 9·5622 | +11 41 9·9 | 0·8190 | +0·29 | +8·5 | 11 |
| 7 | 8 19 52 | +0 55·20 | + 1 12·6 | 3–3 | 15 52 7·42 | 9·5666 | +10 28 13·5 | 0·8289 | +0·30 | +8·2 | 12 |
| 8 | 7 43 52 | +1 15·45 | + 3 35·3 | 8–8 | 15 54 58·96 | 9·5550 | + 9 53 45·1 | 0·8208 | +0·30 | +8·1 | 13 |

August 29.—Interrupted by passing clouds. Observation not quite satisfactory.
September 12–26.—The comet fainter latterly as it approached the horizon.
September 13.—The comet rather faint, owing to moonlight.
October 1.—A faint star near to the nucleus made the bisections difficult and uncertain.
October 5.—Comet rather faint. October 7.—Obtained with difficulty when near the horizon and between clouds.

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